

CVP BREAK-EVEN

① Neighbourhood Book Store:

Sale Price \$ 6.95
Cost Price \$ 3.95
Contrib Margin
per book \$ 3.00

$$BEP = \frac{FC}{\text{Price} - \text{Cost}} = \frac{1800}{6.95 - 3.95}$$

Fixed Cost \$ 1800, = 600 Books

Capacity 1000 books

∴ Need to sell
600 Books to
break even.
60% of Capacity.

② Tara Scans:

Sells for \$ 18/unit
Material Cost \$ 4/unit

Contrib. Margin \$ 12/unit

$$BEP = \frac{FC}{\text{Price} - \text{Cost}} = \frac{280}{18 - 4}$$

Fixed Cost = \$ 280

Capacity 80 scans

BEP = 20 units
to break
even

∴ Tara needs to sell 20
units to break even.

at BE sales is at

$$\frac{20}{80} = 25\% \text{ capacity}$$

③ Bargain Toys

Sells @ \$30

Cost Games \$16

Advertising (fixed) 630/mo

$$BEP = \frac{FC}{Price - cost}$$

$$= \frac{630}{30 - 16}$$

$$BEP = 45 \text{ units to BEP}$$

∴ Bargain Toys need to sell 45 games each month to B. Even.

④ Old Tyne

Sells price \$69

Cost g. units \$42

Fixed cost

- Machine (fixed) 243

$$BEP = \frac{FC}{Price - cost}$$

$$= \frac{243}{69 - 42}$$

$$= 9 \text{ units}$$

∴ Old Tyne would need to sell 9 units to Break even.

⑤ Packard

Net Income (Pgt)	469,300
Target Sales	740,000
Var Cost	259,000
Fixed Cost	11,700
Calc	
Total Revenue @ BEP	

118

Sales = 740,000
less Expenses

Var Cost	259,000
Fixed Cost	11,700
Total Expenses	270,700
Net Income	= 469,300

⑧ Solve

① Ask what % is Var. Cost of Sales

$$259,000 / 740,000 = 35\% \text{ of Sales}$$

② We know that BEP occurs when

$$TR = TC$$

$$\text{BEP Sales} = \text{FC} + \text{VC}$$

So

$$\text{VC} = 35\% \text{ Total Revenue}$$

$$\text{VC} = \text{FC} + 0.35 \text{ TOTAL Rev}$$

$$\begin{aligned}
 \text{BEP} = \text{Sales} &= \text{FC} + 0.35 \text{ of Sales} \\
 \text{Sales} &= 11,700 + 0.35 \text{ sales} \\
 0.65 \text{ Sales} &= 11,700 \\
 \text{Sales @ BEP} &= 18,000 \text{ units}
 \end{aligned}$$

⑥ Scarlett letter

$$\begin{aligned}
 \times \text{ Sales} &= 85,000 \\
 \times \text{ VC} &= 36,550 \\
 \times \text{ FC} &= 27,360 \\
 \times \text{ Sales to BEP}
 \end{aligned}$$

TO SOLVE

Remember ^{COST} Total Revenue & Var
Cost are related

VC is 43% of TOTAL REV @ BE.

$$\text{BEP} = \text{TR} = \text{TC}$$

$$\begin{array}{l}
 \text{Calc} \\
 \text{Pct}
 \end{array}
 \quad 36,550 / 85,000 = 0.43$$

$$X = 0.43x + 27,360$$

$$\begin{aligned}
 27,360 &= 0.57x \\
 x &= 48,000
 \end{aligned}$$

⑦ Parma

Lease - \$417/m
Supplies - \$3 /pic

Can sell 60 Pic/mth
Break even sales

STRATEGY \Rightarrow

- Fixed Cost = 417
max production 60

Fixed Cost
College

$417 / 60 =$ each unit needs
to contribute 6.95
towards the fixed
cost

Variable
Cost
Convey

\$3 unit = each unit has a
cost of \$3/unit

\therefore To Break even you must sell
the unit μ

$$\begin{array}{r} 6.95 \\ + 3.00 \\ \hline 9.95 \text{ per unit.} \end{array}$$

⑧ Jay | Friends

Rent - field 200/day

- equip 150/day

Umpires 280/day

Caps for each player is \$4 each

90 participants

Cost Recovery Price?

STRATEGY

① Calc fixed Cost =

$$\begin{array}{r} 200 \\ 150 \\ 280 \\ \hline \$630/\text{day} \end{array}$$

② Variable cost \$4/cap \times 90 per = \$360

↓ TOTAL COST = 630 + 360

$$= \$990$$

③ $990 \text{ cost} / 90 = \$11/\text{each}$

↓ to recover costs

5.2 Contribution Margin

$$CM = S\text{Price} - VC\text{Unit}$$

TOTAL CONTRIBUTION MARGIN is calculated
by Mult. CM by Volume Sold

TOTAL CONTRIBUTION MARGIN less fixed costs = Profit

$$\text{Contribution Rate} = \frac{\text{Unit Contrib Margin}}{\text{Unit sell price}}$$

② Rosemary.

Invest - fixed Cost	\$834
Adverts - fixed Cost	\$1800
Supplies - VC	\$60/unit
Selling Price	\$499/unit

① Contrib. margin = $\frac{\text{Sale Price} - \text{UVC}}{499 - 60} = \439

∴ Each cake sold contributes
\$439 to covering fixed costs

② Contrib rate = $\frac{\text{Unit Contrib Margin}}{\text{sell price}}$
 $= \frac{439}{499} = 88\%$

Each cake contributes 88% of its selling price
to covering fixed costs.

③ BEP = $\frac{\text{FC}}{\text{Contribution Margin}} = \frac{1800 + 834}{439}$
 $= \frac{2634}{439}$
 $\therefore = 6 \text{ cakes to B/E}$

④ BE sales $6 \text{ cakes} \times 499/\text{cake} = \2994 sales.

② Break

Cell Phone cost	\$53
Sell price	\$99
Fixed	\$500

④ contrib margin = sell - VC

$$99 - 53 = \$46$$

⑤ Contrib Rate = cm/sell p

$$46/99 = 46\%$$

⑥ BEP = fixed/cm

$$500/46 = 11 \text{ phones}$$

⑦ BE Sales = BEP \times Sell

$$11 \times 99 = \underline{\underline{\$1089}}$$